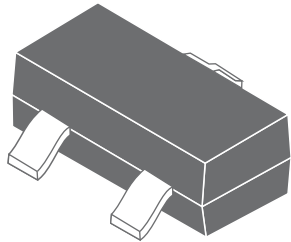
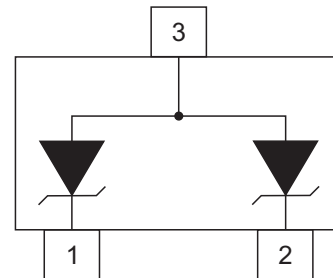


# Electro-Static Discharge TESD03-36G2U Bidirectional TVS Diode

## SOT-23



## Pin Configuration



## Features

- 300 Watts Peak Pulse Power per Line ( $t_p=8/20\mu s$ )
- Protects one I/O or power line
- Low clamping voltage
- Working voltages: 3.3V, 5V, 12V, 15V, 18V, 24V and 36V
- Low leakage current

## IEC Compatibility

- IEC61000-4-2 (ESD)  $\pm 30kV$  (air),  $\pm 30kV$  (contact)--3.3V~18V
- IEC61000-4-2 (ESD)  $\pm 15kV$  (air),  $\pm 8kV$  (contact)--24V~36V
- IEC61000-4-4 (EFT) 40A (5/50ns)

## Applications

- RS-232, RS-422 & RS-423 Data Lines
- Audio/Video Inputs
- Wireless Network Systems
- Digit Video Interface (DVI)
- Medical Sensors
- Notebook Computers

## Mechanical Characteristics

- JEDEC SOT-23 Package
- Molding Compound Flammability Rating:UL 94V-O
- Weight 8.0 Milligrams(Approximate)
- Quantity Per Reel:3000pcs
- Reel Size:7 inch
- Lead Finish:Lead Free

**Maximum Ratings**( $T_A=25^{\circ}\text{C}$  unless otherwise specified )

Parameter	Symbol	Value	Units
Peak Pulse Power( $t_p=8/20\mu\text{s}$ )	$P_{PP}$	300	Watts
Lead Soldering Temperature	$T_L$	260(10 sec.)	$^{\circ}\text{C}$
Operating Temperature Range	$T_J$	-55~150	$^{\circ}\text{C}$
Storage Temperature Range	$T_{STG}$	-55~150	$^{\circ}\text{C}$

**Electrical Characteristics**( $T_A=25^{\circ}\text{C}$  unless otherwise specified )

**TESD03G2U(Marking:M03)**

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Reverse Stand-off Voltage	$V_{RWM}$				3.3	V
Breakdown Voltage	$V_{BR}$	$I_T=1\text{mA}$	3.6			V
Clamping Voltage	$V_C$	$I_{PP}=1\text{A}, t_p=8/20\mu\text{s}$			7	V
		$I_{PP}=15\text{A}, t_p=8/20\mu\text{s}$			10.5	V
Reverse Leakage Current	$I_R$	@ $V_{RWM}$			20	$\mu\text{A}$
Junction Capacitance	$C_{I/O}$	0Vdc, f=1MHz Between I/O Pins and GND		350		pF

**TESD05G2U(Marking:M05)**

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Reverse Stand-off Voltage	$V_{RWM}$				5	V
Breakdown Voltage	$V_{BR}$	$I_T=1\text{mA}$	6			V
Clamping Voltage	$V_C$	$I_{PP}=1\text{A}, t_p=8/20\mu\text{s}$			9.8	V
		$I_{PP}=14\text{A}, t_p=8/20\mu\text{s}$			15	V
Reverse Leakage Current	$I_R$	@ $V_{RWM}$			10	$\mu\text{A}$
Junction Capacitance	$C_{I/O}$	0Vdc, f=1MHz Between I/O Pins and GND		250		pF

**TESD12G2U(Marking:M12)**

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Reverse Stand-off Voltage	$V_{RWM}$				12	V
Breakdown Voltage	$V_{BR}$	$I_T=1\text{mA}$	13.3			V
Clamping Voltage	$V_C$	$I_{PP}=1\text{A}, t_p=8/20\mu\text{s}$			19	V
		$I_{PP}=11\text{A}, t_p=8/20\mu\text{s}$			32	V
Reverse Leakage Current	$I_R$	@ $V_{RWM}$			1	$\mu\text{A}$
Junction Capacitance	$C_{I/O}$	0Vdc, f=1MHz Between I/O Pins and GND		100		pF

Electrical Characteristics( $T_A=25^{\circ}\text{C}$  unless otherwise specified )

**TESD15G2U(Marking:M15)**

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Reverse Stand-off Voltage	$V_{RWM}$				15	V
Breakdown Voltage	$V_{BR}$	$I_T=1\text{mA}$	16.7			V
Clamping Voltage	$V_C$	$I_{PP}=1\text{A}, t_p=8/20\mu\text{s}$			24	V
		$I_{PP}=10\text{A}, t_p=8/20\mu\text{s}$			38	V
Reverse Leakage Current	$I_R$	@ $V_{RWM}$			1	$\mu\text{A}$
Junction Capacitance	$C_{I/O}$	0Vdc, f=1MHz Between I/O Pins and GND		100		pF

**TESD18G2U(Marking:M18)**

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Reverse Stand-off Voltage	$V_{RWM}$				18	V
Breakdown Voltage	$V_{BR}$	$I_T=1\text{mA}$	20			V
Clamping Voltage	$V_C$	$I_{PP}=1\text{A}, t_p=8/20\mu\text{s}$			29	V
		$I_{PP}=9\text{A}, t_p=8/20\mu\text{s}$			45	V
Reverse Leakage Current	$I_R$	@ $V_{RWM}$			1	$\mu\text{A}$
Junction Capacitance	$C_{I/O}$	0Vdc, f=1MHz Between I/O Pins and GND		75		pF

**TESD24G2U(Marking:M24)**

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Reverse Stand-off Voltage	$V_{RWM}$				24	V
Breakdown Voltage	$V_{BR}$	$I_T=1\text{mA}$	26.7			V
Clamping Voltage	$V_C$	$I_{PP}=1\text{A}, t_p=8/20\mu\text{s}$			43	V
		$I_{PP}=6\text{A}, t_p=8/20\mu\text{s}$			52	V
Reverse Leakage Current	$I_R$	@ $V_{RWM}$			1	$\mu\text{A}$
Junction Capacitance	$C_{I/O}$	0Vdc, f=1MHz Between I/O Pins and GND		60		pF

**TESD36G2U(Marking:M36)**

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Reverse Stand-off Voltage	$V_{RWM}$				36	V
Breakdown Voltage	$V_{BR}$	$I_T=1\text{mA}$	40			V
Clamping Voltage	$V_C$	$I_{PP}=1\text{A}, t_p=8/20\mu\text{s}$			60	V
		$I_{PP}=4\text{A}, t_p=8/20\mu\text{s}$			75	V
Reverse Leakage Current	$I_R$	@ $V_{RWM}$			1	$\mu\text{A}$
Junction Capacitance	$C_{I/O}$	0Vdc, f=1MHz Between I/O Pins and GND		50		pF

## Ratings and Characteristic Curves

Fig.1 ESD Clamping Voltage Screenshot  
Positive 8 kV Contact per IEC61000-4-2

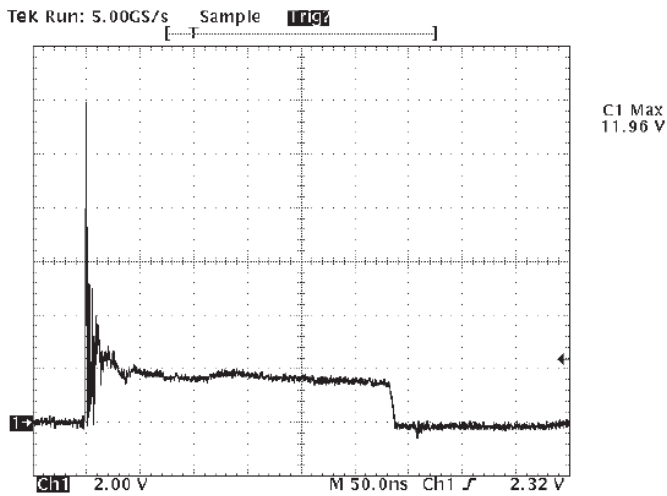
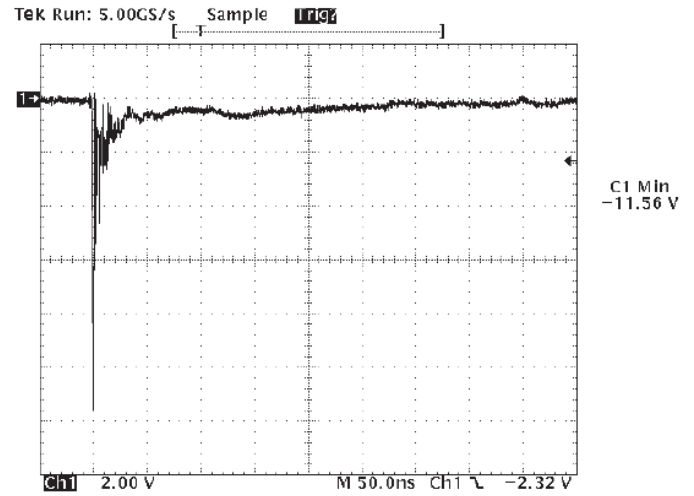
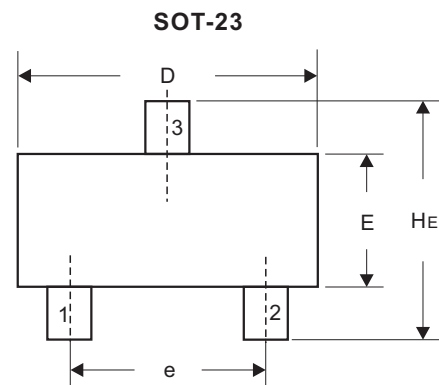


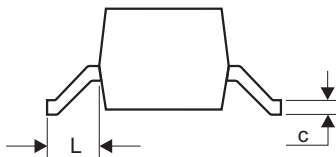
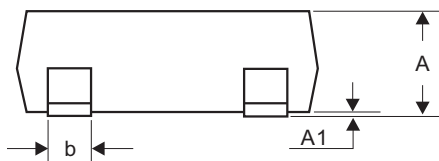
Fig.2 ESD Clamping Voltage Screenshot  
Negative 8 kV Contact per IEC61000-4-2



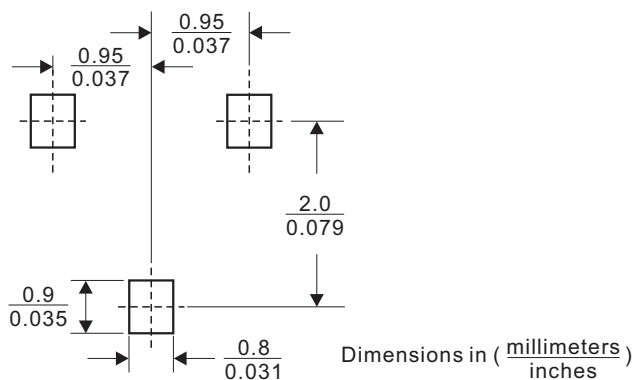
## Dimensions(SOT-23)



DIM	Millimeters		Inches	
	Min	Max	Min	Max
A	0.89	1.11	0.035	0.044
A1	0.01	0.10	0.001	0.004
b	0.37	0.50	0.015	0.020
c	0.09	0.18	0.003	0.007
D	2.80	3.04	0.110	0.120
E	1.20	1.40	0.047	0.055
e	1.78	2.04	0.070	0.081
L	0.35	0.69	0.014	0.029
HE	2.10	2.64	0.083	0.104



### Recommended Mounting Pad Layout



单击下面可查看定价，库存，交付和生命周期等信息

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